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(54) Metal halide discharge lamp suitable for an optical light source.

(57) A metal halide discharge lamp (10) operated from a D.C. power source (28), which is suitable for an optical light source (5), has a quartz arc tube (16). Anode (18a) and cathode (18b) electrodes are disposed in the arc tube (16). A gap length (L) between electrodes (18a, 18b) is so short that the metal halide discharge lamp (10) is capable to function as a point light source. The arc tube (16) contains an inert gas, mercury and metal halide additives including metal bromine. By utilizing the cataphoresis effects, the transformation of silica (SiO_2) of the arc tube in cristobalite or the formation of an opaque substance on the arc tube is prevented. Atomic ratio of bromine to halogen contained in the arc tube is about 60% to 90% and the wall load developed in the arc tube is substantially greater than 40 W/cm^2 .

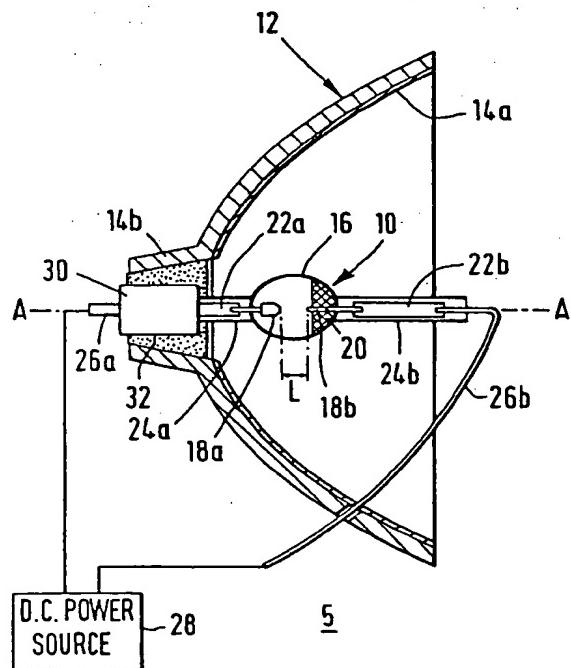


FIG.1.



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EUROPEAN SEARCH REPORT

Application Number
EP 93 31 0584

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.CLS)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CLS)
X	US-A-4 686 419 (BLOCK WERNER ET AL) 11 August 1987	1,4,7-9, 12	H01J61/82
A	* abstract; figures 1,3 * * column 1, line 12 - line 17 * * column 1, line 42 - line 43 * * column 1, line 48 - line 49 * * column 2, line 56 - line 59 * * column 3, line 60 * * column 4, line 45 * ---	2,3,5,6, 10,11, 13-15	H01J61/12 H04N9/31 F21M1/00 H01J61/86
X,P	US-A-5 192 891 (MATSUURA ATSUSHI ET AL) 9 March 1993	1-3	
Y,P		1-8, 11-15	
A,P	* abstract; claims 7,12 * * column 2, line 59 - line 60 * * column 3, line 33 - line 34 * * column 4, line 6 * * column 5, line 16 * * column 6, line 30 - line 34 * ---	9,10	
X	PATENT ABSTRACTS OF JAPAN vol. 004 no. 013 (M-090), 30 January 1980 & JP-A-54 150873 (MITSUBISHI ELECTRIC CORP) 27 November 1979, * abstract *	1	
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Y	DE-C-37 16 485 (W. C. HERAEUS GMBH) 24 November 1988 * abstract; claim 4 * * column 1, line 48 - line 54 *	1-15	
		-/-	
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	27 June 1995	Martin Vicente, M	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
V : particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date		
A : technological background	D : document cited in the application		
O : non-written disclosure	I : document cited for other reasons		
P : intermediate document	& : member of the same patent family, corresponding document		



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Application Number
EP 93 31 0584

DOCUMENTS CONSIDERED TO BE RELEVANT									
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D, Y	US-A-5 135 300 (TOIDE EIICHI ET AL) 4 August 1992 * abstract; figures 1,9 * * column 1, line 10 - line 52 * * column 2, line 28 - line 47 * ---	1,7-15							
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A	* abstract * * page 1, line 1 - line 6 * * page 3, line 9 - line 12 * * page 7, line 2 - line 8 * ---	2-5, 10-13							
Y	EP-A-0 477 668 (PATRA PATENT TREUHAND) 1 April 1992	1,6-8,14							
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Y	US-A-3 566 178 (MORI LEO ET AL) 23 February 1971	1,4,6,8, 11,14 2,3,5,7, 10,12, 13,15							
A	* abstract *								
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<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>27 June 1995</td> <td>Martin Vicente, M</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	27 June 1995	Martin Vicente, M
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THE HAGUE	27 June 1995	Martin Vicente, M							
CATEGORY OF CITED DOCUMENTS									
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document							